

Chapter XVIII

Polychlorinated Biphenyl (PCBs)

A. GENERAL.

1. This chapter provides DRMS guidance for the acceptance, handling and disposal of Polychlorinated Biphenyl (PCB) items and liquids. It is applicable to all levels of DRMS and supersedes prior guidance.

2. DoD 4160.21-M, Chapter 10, Attachment 1, Item 26, provides DoD policy and procedures.

B. REFERENCE.

PCBs are regulated by the Toxic Substances Control Act (TSCA) 15 U.S.C. 2601 et seq. Procedures in this chapter are in compliance with the TSCA and with the U.S. Code of Federal Regulations 40 CFR Part 761, PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions. Procedures are also in compliance with 49 CFR Part 172, Hazardous Materials Tables and Hazardous Materials Communications Regulations. The provisions of the Resource Conservation Act (RCRA) do not apply to PCBs. However, state laws may be more stringent regarding PCBs than Federal laws and regulations.

C. DEFINITIONS.

This regulation has more than one hundred definitions that are not possible to list here. Since definitions are extremely important in making decisions on how to use, store, test and dispose of PCBs and PCB Items, please consult the 40 CFR 761.3 or access the required part of the regulation for definitions on the USEPA web site at <http://www.epa.gov>.

D. ACCEPTANCE, HANDLING, PROCESSING.

These procedures conform to U.S. law, specifically 40 CFR Part 761. If you suspect your state laws/regulations are different from the Federal law, contact DRMS-LHP for guidance. Over-

seas: DRMOs are governed by the environmental laws of the host country. The in-country disposal of PCBs must conform to the host country's environmental laws and regulations.

1. Receiving and Handling.

a. The generating activities are responsible for the following:

(1) Providing evidence of the presence or absence of PCBs in parts per million (ppm). Unless specifically excluded, a PCB analysis (gas chromatography test) must accompany each suspected or confirmed PCB item(s) which contains PCB fluid at the time of turn-in (see paragraph E for testing requirements). USEPA regulations classify PCB concentrations as follows:

- 0->2 ppm no detectable PCB concentration
- >2-49 ppm – Non-PCB (non regulated)
- >50-499 ppm – regulated PCB contamination
- >500 ppm – regulated “pure” PCB substance

(2) 40 CFR 761.1(b)(3) states that PCB concentrations can be on a wet weight basis (liquids) or dry weight basis (non-liquid). This part of the regulation explains the concept and provides the contamination equivalents for wet weight and dry weight concentrations.

(3) Providing the information below (typed or printed) in blocks W through Y on the DD Form 1348-1/1A:

- The name, type, method(s) and results of the gas chromatography test(s).

- The name and signature of the authorized person turning-in the property.

(4) PCB Contaminated Electrical Equipment, oil filled electrical equipment (includes transformers) other than circuit breakers, reclosers, and cable, whose PCB concentration is unknown, must be assumed to be PCB contaminated electrical equipment at 50-499 ppm PCBs.

(5) In the event a mineral oil transformer, assumed to contain less than 500 ppm of PCBs, is tested and found to be contaminated at 500 ppm or greater PCBs, it will be subject to all the requirements of 40 CFR Part 761. Efforts must be initiated immediately to mark and store the PCB transformer within 7 days after discovery.

(6) Intact PCB property or containers that contain PCBs or PCB property will be marked, per 40 CFR Part 761, Subpart C. (Instructions for marking are available in paragraph G of this chapter). (For OCONUS only: Marking will be in accordance with the Overseas Environmental Baseline Guidance Document (OEBGD) or where issued the Final Governing Standards (FGSs).

b. The DRMO Chief or designated representative is responsible for the following:

(1) Inspection. Inspecting each suspected or confirmed PCB items to verify that they are properly identified, tested, and marked.

(2) Storage. Because DRMO storage areas vary greatly, thus creating a problem with safely attaching documents and lab analysis to the PCB property, the following procedures apply depending on the DRMO's storage area:

- **Inside Storage** - Mark the property with a **"PCB"** or **"NON PCB"** label (< 50 ppm) and attach a copy of the lab analysis to the DD Form 1348-1/1A and the property. Also, retain a copy of the lab analysis with the DD Form 1348-1/1A file copy.

- **Outside Storage** (Inclement Weather) - Mark the property with a **"PCB"** or **"NON PCB"** label, write the DD Form 1348-1/1A number and the PCB ppm on the property with an indelible marker. Do not attach the DD Form 1348-

1/1A or lab analysis to the property if inclement weather might destroy the documents. Retain the lab analysis attached to the DD Form 1348-1/1A in the office files.

b. **Turn-In Requirements.** Ensure that PCBs and PCB items meet the turn-in requirements of DoD 4160.21-M, Chapter 10. If there is evidence of leaking items being offered for turn-in, treat this as a spill and coordinate response action with host installation. Do not send the vehicle back to its point of origin. Leaking or damaged articles must be repackaged in containers that meet required packaging for PCBs in 40 CFR 761.60 and 761.65; i.e., approved containers for performance oriented packaging (POP). See the packing group column of 49 CFR 172.101. These containers, often referred to as overpacks, must also be properly marked (see paragraph G, Marking and Labeling).

c. **No physical contact.** DRMS personnel shall have as little physical contact with PCB fluids as possible. This is due to the physical hazards involved. If there is skin contact with PCB fluid, report the incident to Office of Support Services, Safety and Health Division (DRMS-DDH), (DSN)932-5866 for appropriate action. DRMS personnel will not engage in PCB testing or ultimate disposal activities such as incineration, chemical detoxification, or burial.

2. Processing of Electronic Cabinets and Other Potential PCB Equipment.

See instructions at Enclosure 4.

3. Processing for RTDS or UD.

For purposes of DRMS processing, there are three categories of PCBs and PCB items (see Enclosure 3).

a. **RTD and Sales Processing Cycle.** The first category covers those PCBs and PCB items that follow the property management processing cycle (RTDS and Ultimate Disposal). This category includes hermetically sealed items at any PCB concentration, items with PCB concentrations up to 49 ppm, and any item with PCB concentration below the detectable limit; i.e., less than 2 ppm. Testing is not required for hermetically sealed items. User's knowledge, manufacturer's data plate information, or manufacturer's docu-

mentation may be used to turn-in hermetically sealed items with identifying information annotated on the turn-in document or attached to the turn-in document. If information is not available on a hermetically sealed item, then dispose of the item as a PCB article (see paragraph C). Accept accountability and physical custody of this category following procedures of paragraphs D1a-c above.

b. **Sales Only.** The second category covers those items that may be offered for sale. This category includes:

(1) PCB-contaminated electrical equipment less than 50 to 499 ppm.

(2) Metalworking machinery with hydraulics systems at 0-49 ppm turned-in with a gas chromatography (GC) lab analysis and a signed statement declaring that the PCB concentrations of less than 50 ppm are not the result of dilution (see DRMS-I 4160.14, Volume II, Chapter IV).

NOTE: The dilution rule is at 40 CFR 761.1(b)(5). It states that no provisions specifying a PCB concentration may be avoided as a result of any dilution, unless otherwise specifically provided in the regulation.

(3) Drained PCB hydraulic machines (less than 1,000 ppm) turned in for salvage, which have been drained of all free-flowing liquids and flushed with an appropriate solvent by the generating activity per 40 CFR Part 761.60(b)(3). The generating activity shall verify on the DD Form 1348-1/1A that the equipment has been drained and flushed in accordance with 40 CFR Part 761.60(b)(3).

Accept accountability and physical custody of this category following the procedures of paragraphs D1a-c above.

c. **Ultimate Disposal.** The third category covers those items that will be processed directly to ultimate disposal. It includes:

- transformers, capacitors and other electrical equipment containing PCB fluids at concentrations 50 ppm or greater;

- undrained items with PCBs at or greater than 50 ppm;

- drained items that previously contained PCBs at 50 ppm or greater;

- bulk fluids;

- PCB lamp ballasts;

- PCB Remediation waste; and,

- PCB Bulk Product Waste, spill products and other debris.

Accept accountability and physical custody following the procedures in paragraphs D1a-c, except that physical custody of metalworking machinery with hydraulic systems at concentrations of 50 ppm or greater will not be accepted.

d. **Capacitor Disposal.** Disposers of PCB Large or Small capacitors must place the capacitors in a DoT approved container for storage and disposal. The spaces in the container must be filled with absorbent material.

e. **Processing Electronic Scrap** (see Enclosure 4). The SCL "EWG" has been established for the accumulation of material received as scrap having high potential for contamination with components containing PCB and/or chlorofluorocarbons (CFCs). This will normally consist of household appliances and electronic components manufactured prior to 1980 or items that contain refrigerants (see DRMS-I 6050.1, Chapter XXX). This SCL may be offered for sale with appropriate clauses to notify buyers of the potential PCB or ozone depleting substances contained therein. At no time will this material be subject to processing or loading procedures that could result in an accidental release of regulated/dangerous materials. If sales efforts fail, the material will be retained in this SCL until regulated/dangerous components have been removed and properly disposed. Remaining material will be segregated to appropriate SCLs.

E. TESTING.

An analysis performed by gas chromatography (GC) must accompany each suspected or confirmed PCB item (see definitions at paragraph C) that contains fluid at the time of turn-in, except for hermetically sealed items.

1. DRMS will not accept the use or results of chlor-n-oil test kits for determining the concentrations of PCBs in an item. USEPA requires testing by gas chromatography (GC)/Electron Capture Detector (ECD) as the minimum acceptable method for determining the concentration and nature of PCBs in oils to satisfy the regulatory requirements.

2. The following GC test methods are approved by USEPA (see 40 CFR 761.60(g)(iii)).

a. USEPA SW 846, Test Methods for Evaluating Solid Waste, Method 8082, "Polychlorinated Biphenyls (PCBs) by Capillary Column Gas Chromatography".

b. USEPA Method 608, Organochlorine Pesticides and PCBs.

c. ASTM-D 4059, Standard Method for Analysis of Polychlorinated Biphenyl's in Insulating Liquids by Gas Chromatography".

NOTE: Testing laboratories must be used which use the above standard testing protocols; and, can provide quality assurance on the precision of their test results.

3. DRMS personnel will not drain or participate in drawing any testing samples from PCB items. If circumstances require additional analysis or verification of the results provided by the generating activity after receipt of a PCB article, Interservice Support Agreement (ISA) sources (host) may be used for these services. If necessary, DRMS will obtain the required service for the DRMO.

a. Facilities used to store PCBs for disposal must have compliant storage (in accordance with 40 CFR 761.65) which consists of:

b. PCB storage facilities must be equipped with the following:

- Roof and walls to prevent rainwater from reaching the stored PCBs and PCB items.

- The floor must have continuous curbing with a minimum height of six inches. The floor and curbing must provide a containment volume equal to at least two times the volume of the largest PCB item stored or 25 percent of the internal volume of all PCB items stored, whichever is greater.

- No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area.

- Floors and curbing constructed of continuous smooth and impervious materials, such as Portland cement concrete or steel to prevent or minimize the penetration of PCB chemical substances or mixtures.

- Locations that are not below the 100-year flood water elevation.

NOTE: Conforming storage facilities (CSFs) are not sized for PCB transformer storage, unless a state designates them as a hazardous waste. TSCA or state regulated PCB transformers may be stored in CSFs only when space is available. RCRA and/or state regulated hazardous wastes will receive priority of storage space in CSFs.

F. FACILITIES AND STORAGE.

(Reference 40 CFR 761.65)

1. Facilities.

2. Storage.

PCB or PCB-contaminated item that has been taken out of service and is on the DRMO accountable records is defined as an item that has been placed in storage for disposal.

a. PCB wastes must be disposed of within one year from the date it was determined to be waste and the decision was made to dispose of it.

b. PCB items must be dated when removed from service for disposal. Manage storage so that PCB items can be located by the date of removal from service.

c. Do not accept physical custody for any PCB item for which compliant storage is not available.

d. PCB containers and articles in storage must be checked for leaks and the findings recorded at least once every 30 days. If leaking items are located the DRMO must:

- Immediately transfer any leaking containers or articles and their contents to properly marked nonleaking containers.

- Transfer the items that they have physical custody. Notify the host activity in the event of a PCB spill.

- Cleanup will be accomplished as outlined in paragraph H. Cleaning materials and residue will be disposed of as PCB materials as outlined in paragraph D3c.

- Containers selected for the recontainerization of leaking PCB items and nonliquid PCB mixtures or spill residues must meet the packaging requirements in 49 CFR 173.202. Containers for liquid PCBs or liquid PCB mixtures and spill residues must also comply with 49 CFR.

- Records of inspections, maintenance, cleanup, and disposal must be maintained in accordance with 761.180(a) and (b).

NOTE: For PCB mixtures, determine packaging requirements based not only on PCBs, but, also on whether the PCBs are mixed with a regulated hazardous substance, material, or waste.

e. PCB articles and PCB containers must be dated when they are placed in storage. Storage will be managed so that the location of PCB articles and PCB containers can be determined by the

storage entry date. Disposal facilities must receive PCB wastes with 90 days or more remaining in the 1-year time limit. In other words, DRMOs have, at the most, 9 months to remove PCB wastes from the storage facility.

f. Operators of storage facilities will establish and maintain accurate inventories and inspection records of all PCB items in their custody. Inspection records will include the date of the inspection, the condition of the item, the name and position of the inspecting individual. The inspector will also sign the record of inspection. (A memorandum of record will suffice for the record of inspection.)

g. DRMOs that manage a TSCA-regulated storage facility must notify EPA, through the host facility, that it is a generator of PCB waste. You should receive confirmation from EPA to use the host's RCRA identification number for manifesting PCB waste. EPA Form 7710 is used to provide this notification. Send a copy of this form to DRMS-LH.

G. MARKING AND LABELING.

1. See 40 CFR Part 761.40 and Enclosure 5. The regulation requires that PCB items be marked at the time of removal from use if not already marked. The PCB mark may be a large or small PCB marking label depending on the PCB item being marked. Generating activities are responsible for marking the PCB items if property is not already marked.

2. The following items must have approved markings:

a. Locations of PCB Transformers (at or greater than 500 ppm)

b. PCB transformers (at or greater than 500 ppm)

c. Voltage regulators (at or greater than 500 ppm) and locations of voltage regulators.

d. PCB Article containers (containing 50 or more ppm PCB).

e. PCB containers (at or greater than 50 ppm) (plus date taken out of service).

c. Large PCB high voltage capacitors (2,000 volts or more).

d. Large and small PCB low voltage capacitors (less than 2,000 volts), at the time of removal from use.

e. PCB Items and equipment-containing a PCB transformer or PCB capacitor (large high voltage or low voltage).

f. Electronic motors using PCB coolants (containing 50 or more ppm PCB).

g. Hydraulic machinery using PCB hydraulic fluid (containing 50 or more ppm PCB).

h. Heat transfer systems, other than transformers (containing 50 or more ppm PCB).

i. PCB containers or overpacks containing articles or equipment listed in paragraphs G2a - h above. A more comprehensive listing of examples is at Enclosure 2.

j. PCB storage areas.

k. PCB Transport Vehicles (Front, Back, Sides).

3. Each storage area used to store PCB items for disposal must be segregated. Such areas will be conspicuously marked with warning signs, using the large PCB mark (at least 6 inches by 6 inches).

4. Each transport vehicle loaded with PCB items must be conspicuously marked by the transporter on each end and side with large PCB marks (at least 6 inches by 6 inches) if it contains more than 45 kg/99.4 pounds (8 gallons) of liquid PCBs or one or more transformers.

5. PCB markings are available through normal supply channels or commercial vendors.

H. SPILLS. (40 CFR 761.125)

See DRMS-I 6050.1, Chapter VII, Oil and Hazardous Materials/Hazardous Waste (HM/HW) Spill Prevention and Response, for guidance. Enclosures 6 and 7 provide general guidelines for PCB spills.

I. PERSONNEL SAFETY.

1. Each DRMO that is receiving or has in storage any identified or suspected PCB items must have the following personal protection equipment items:

a. Protective clothing (either one piece or two pieces) covering all body areas from the neck to the ankles (except hands).

b. Protective gloves of the long cuff type (to be worn inside arms of protective clothing).

c. Protective boots, combining both chemical and impact protection, or that fit over impact protection footwear and provide chemical protection. These should be worn with the upper part of the boot inside the leg of the protective clothing.

d. Hard hat with faceshield.

2. The hazards to DRMO personnel handling PCB items are discussed in paragraphs C14c - d. Since PCB is toxic, any person required to handle PCB items must wear the protective equipment listed above when off-loading; i.e., receiving from the generator; out-loading; or physically moving the items from one location/shelf/area in the DRMO to another. The only exemption from this policy is hermetically sealed PCB items. These require the use of protective gloves only.

3. At no time is smoking, eating, or drinking allowed in areas where PCB items are handled. Because of the possibility of contamination, employees must wash hands thoroughly after handling PCBs.

4. Supervisors will instruct employees working with PCBs in the hazards associated with them as outlined in paragraph C14c, and in proper handling procedures as outlined in paragraph D. Safety and health managers will disseminate information on the care and use of personal protective equipment in accordance with DLAM 6055.1, Chapter X.

J. ULTIMATE DISPOSAL.

1. Manifest Requirements for PCBs.

a. A shipper who offers PCB waste for transportation off-site for storage or disposal will prepare a manifest on EPA form 8700-22, Uniform Hazardous Waste Manifest and, if necessary, a continuation sheet.

b. PCB waste is defined as a substance with a PCB concentration of 50 PPM or greater. (**NOTE:** 761.207 requires that PCB wastes where the concentration is below 50 ppm, as the result of dilution, be manifested as if they contain PCB concentration of 50 ppm and above).

c. The shipper will specifically detail in the manifest:

(1) For each bulk load of PCBs, the identity of the PCB waste, the earliest date of removal from service for disposal, and the weight in kilograms of the PCB waste.

(2) For each PCB article container or PCB container, a unique identifying number, type of PCB waste; e.g., soil, debris, small capacitors, earliest date of removal from service for disposal, and weight in kilograms of the PCB waste.

(3) For each PCB article not in a PCB container or PCB article container, the serial number, if available, or other identification if there is no serial number, the date of removal from service for disposal, and weight in kilograms of the PCB waste in each PCB article.

d. Generating activity will use “40 CFR Part 761” or number assigned to them by EPA or the state under RCRA as their identification number on the manifest.

e. The shipper of PCB waste will:

(1) Sign the manifest certification.

(2) Obtain on the manifest the handwritten signature of the initial transporter and date of acceptance.

(3) Retain one copy in accordance with section 761.209(A).

(4) Give the transporter the remaining copies of the manifest that will accompany the shipment of PCB waste.

(5) Ensure that a signed copy of manifest is received from the facility to which the PCBs were sent. If not received, file an Exception Report (see paragraph J3).

(6) Confirm that the disposal facility received the manifested waste by close of business the day after the signed manifest is received from the disposal facility. This can normally be handled with a telephone call. Keep a record of calls on the Annual Document Log.

f. The waste codes to be used are PCB1 for PCB articles, transformers, capacitors, etc., and PCB2 for PCB containers. (Some states may require use of its waste code system.)

g. Because of our status as generators (not commercial storers) of PCBs, off-site generators are not required to manifest PCBs to us (or any other DoD facility) for storage, unless the PCBs are state regulated as HW.

2. Certificates of Disposal and Recycling.

Disposal facilities are required to send copies of Certificates of Disposal/Recycling to generators within 30 days of disposing of the material. If you do not receive the Certificate of Disposal/Recycling within 13 months of the date of removal, file a 1-Year Exception Report with your regional EPA office (see paragraph J3).

3. Exception Reporting.

a. DRMOs that manifest PCBs must ensure a signed copy of the manifest is received from the facility to which the PCBs were sent. The following timetable applies:

(1) If no return copy is received within 35 days, contact the facility and ask them to locate it.

(2) If no return copy is received within 45 days, file an Exception Report with the EPA Regional office. The report must include a copy of the manifest and a cover letter explaining the circumstances.

(3) State regulations may differ. Check the appropriate state regulation to determine state requirements.

b. The DRMO must file a 1-Year Exception Report to the Regional Administrator if the following occurs:

(1) The DRMO manifested the PCBs or PCB items to the disposer on a date within 9 months from the date of removal from service; and

(2) The DRMO has not received, within 13 months from the date of removal from service, a Certificate of Disposal, or, if the DRMO receives a Certificate of Disposal confirming disposal on a date more than 1 year after removal from service.

c. The report must include the following:

(1) Legible copy of manifest.

(2) Cover letter explaining:

- The date(s) when the PCBs or PCB items were removed from service for disposal.

- The date(s) when the PCBs or PCB items were received by the DRMO.

- The date(s) when the affected PCBs or PCB items were transferred to a designated disposal facility.

- The name of the transporters, or disposers known to be involved with the transaction.

- The reason, if known, why the affected PCBs or PCB items were not disposed of within 1 year from the date of removal from service for disposal.

d. A copy of any One-Year Exception Report filed must be sent to DRMS-LH.

K. RECORDS.

1. Federal regulations (40 CFR 761.180) require that each DRMO facility storing at least 45 kilograms/99.4 pounds (eight gallons) of PCB oil or fluids in PCB containers, one or more transformers, or 50 or more PCB large high or low voltage capacitors will develop and maintain records on the receipt and disposition of PCBs and PCB items.

2. Annual records consist of manifests and certificates of disposal (CD). They must be maintained for 3 years (see paragraphs K5 -6 below). 40 CFR 761.218 requires the owner or operator of the disposal facility to send the CD to the generator identified on the manifest as follows:

- Within 30 days of the date that disposal of each item of PCB waste identified on the manifest was completed ; or,

- The generator and the disposer contractually agree to another time frame.

3. An annual report must be prepared for each facility by 1 Jul covering the previous calendar year. The report consists of the following records showing the disposition of PCBs and PCB items:

a. The PCB Annual Document Log, DRMS Form 981 (see Enclosure 8) and

b. The PCB Annual Log Summary, DRMS Form 981-1 (see Enclosure 9).

NOTE: These report forms must be available for inspection by authorized representatives of the EPA.

4. The facility shall also maintain a record of inspections and cleanups. When a DRMO Chief is responsible for more than one facility that uses or stores PCBs and PCB items in the quantities described above, the records and documents may be maintained centrally at one of the facilities. This facility is normally open 8 hours a day for a 40-hour week. The identity of the facility maintaining the records and documents must be available to each of the other facilities.

5. The records and documents will be maintained at the facility for at least 3 years after the facility ceases storing PCB and PCB items in the prescribed quantities.

6. Items not disposed at the end of the calendar year will be carried over to a new form for the following calendar year.

7. A one-year storage extension may now be obtained from the EPA Regional Administrator for the Region in which the waste is stored if the request is made in writing and identifies:

- The entity storing the waste.
- The types, volumes, and locations of the wastes.
- The reason for failing to meet the initial one-year deadline.

E. OTHER REGULATED AREAS.

1. Import for disposal (761.73).

The regulation does not allow PCBs or PCB Items to be imported for disposal into the U.S. without an exemption issued under TSCA section 6(e)(3). However, per USEPA General Counsel determination, November 13, 1980, US (DoD) government PCBs and PCB Items manufactured and procured in the US, taken overseas by the DoD for use, and remaining under DoD control, may be returned to the US for disposal because they are not considered imports.

2. Export for Disposal (761.97).

The regulation allows export for disposal of PCBs and PCB items at concentrations less than 50 ppm PCBs or 10 microgram per 100 centimeter squared (dry weight). If the PCB concentrations are unknown, assume PCBs and PCB Items to be equal to or greater than 50 ppm, therefore, not exportable for disposal.

3. Other Transboundary Shipments.

The following transboundary shipments are not considered exports or imports:

- a. PCB waste generated in the United States, taken out of the US, and returned to the US for disposal.
- b. PCB waste in transit through the US going to or coming from another country.

4. International Agreements.

The U.S. has not yet ratified the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, which imposes a series of obligations on Parties to the

Convention. Since the U.S. is not a Party to the Convention, Parties to the convention may not trade in Basel-covered wastes with the U.S. unless there is a separate bi- or multi- lateral agreement or arrangement between the concerned governments covering such wastes (e.g., PCB waste) meeting the conditions specified in Article 11 of the Basel Convention. The lack of such an agreement or arrangement could prevent the export of DoD PCB waste from a Basel Party host nation to a third country for disposal.